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PRE-WAR DEVELOPMENTS
IN MILK DISTRIBUTION

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by

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The pattern of retail distribution of milk and cream in many cities all over the United States changed materially in the decade before the war. New sales outlets, new containers, new products and pricing plans brought about radical changes in the system of distribution, some of which had undoubtedly become permanent. Other changes were still in an experimental stage, subject to discard if further testing proved them unsound. War conditions vitally affected this picture, bringing in new factors that promise to accelerate some changes and retard others. In the years ahead this important field of food distribution promises to be even more changeful than in the last 10 years.

To the dairy farmer and his cooperative marketing associations, fluid milk and cream is the outlet bringing in the highest value for milk produced. Nearly 35 billion pounds of fluid milk and cream were sold in 1941, with a total farm value of close to a billion dollars. Consumers spent well over 2 billion dollars for this milk and cream, making it one of the leading items in their food budget. Consumption of milk as fluid milk and cream in the United States for the past decade¹ was as follows:

<u>Year</u>	<u>Million pounds</u>
1924-29.....	39,466
1931.....	45,282
1932.....	45,160
1933.....	43,974
1934.....	42,138
1935.....	42,396
1936.....	42,624
1937.....	42,625
1938.....	41,441
1939.....	42,917
1940.....	43,677
1941.....	45,821

Representatives of both the farmer and the consumer groups have long attacked the system, making apparently conflicting charges, such as monopolistic restraint of trade and excessive duplication of service by small operators, along with many others.

¹Source of this data is the February 1942 issue of *Dairy Situation*, Bureau of Agricultural Economics, U. S. Dept. of Agriculture.

NOTE.— Credit is due P. E. O'Donnell, who assisted in assembling much of this information.

The primary purpose of this brief examination of some of the changes which took place in selected cities in recent years is to furnish information to interested groups on the nature and extent of these changes. Factual information on trends, or on the current picture where trend data are not available, is presented in a convenient, comparable form.

Since the main body of data was gathered, the full impact of war conditions has become apparent. In 1941 scarcities of materials were beginning to be felt but other war effects were barely anticipated. In 1942 the full economic impact of the modern war economy has been felt. Price control, manpower control, and allocations of productive resources by Government decree are forcing changes in distribution. Some of those changes may be anticipated in terms of the importance of milk, the efficiency of distribution methods, and the comparative urgency of war needs for resources normally used by the different distribution methods.

METHOD OF ASSEMBLING INFORMATION

The approach to this problem involved attempting first to obtain accurate current data on the pattern of milk distribution; second, to secure comparable data for an earlier period; third, to obtain as much background information as possible on factors acting to speed up or retard various types of changes; and fourth, to obtain a limited quantity of information on the effect of these changes on other elements in the market. Those who are familiar with the inner workings of milk markets will realize the difficulties likely to be encountered in securing complete and reliable data on many of these points. Such difficulties have been greatly reduced as the result of detailed auditing records now being obtained by many governmental milk control agencies, but even such records are often not as complete nor in as much detail as might be desired. These inevitable limitations necessarily apply to the information in this report.

A topical, rather than chronological, organization has been chosen for presenting the data - the discussion is by trends in outlets, in containers, and in products - for reasons which may not be at once obvious. Certainly, if one attempts to determine causes for the differences between today's milk market and yesterday's, there are strong reasons for emphasizing the simultaneous development of the various innovations, market by market, rather than considering them as separate developments.

The onset of the depression and the country-wide decline in milk sales may appear to have been the central fact in the picture of milk distribution methods. There was, during the early years of the decade, a desperate search for new marketing methods which would increase the individual distributor's sales volume, or protect it against further loss. Thus, it may have seemed that the innovations were merely temporary expedients, bound to be as short-lived as the economic disturbance that they accompanied.

It should now be apparent, however, that many of these innovations are here to stay. Evidence to be presented later shows the amazing hold that store sales, for example, or fiber containers have acquired in

different markets. In some places entirely new distributing firms have established themselves on the strength of one innovation or another. This is evidence that technical developments and changes in the economic environment are giving independent significance to each of the features that have been dynamic in milk distribution since 1930. It is entirely in accord with this new significance, therefore, to examine the developments in each class separately.

CHANGES IN CHANNELS OF DISTRIBUTION

Shift From Retail Route to Store Sales

The decrease in the volume of milk sold to consumers from regular retail home-delivery routes must be listed as the foremost change of recent years in milk distributing methods. In many of the larger cities this decrease has been of tremendous proportions. In others it has been less, though of such potentialities as to unsettle the local market structure. In only a few major markets has there been no change in this direction.

Chicago has been among the more dynamic markets with regard to store sales. Starting with less than one-fourth of the milk being sold through stores in the early 1930's, the increase brought store sales to nearly half of the total by 1941. In Chicago it appeared to be a segment of the dealer structure which sparked the change - the vendors or peddlers. After a turbulent era during the early part of the decade, the pressure toward increased store sales was released to culminate in a rapid rise in the last half.

New York City experienced a similar, only slightly less striking, change when store sales rose from 30 percent to 50 percent of the total between 1930 and 1941. Until 1937 the rise was slight; thereafter, rapid. New York had generally obtained much of its milk through stores. Until 1932, however, the store milk was mostly sold in bulk. Much of the increase in store sales resulted from the change to bottled milk which was more acceptable to consumers. A second stimulus to store sales appears to have been given in 1937 by the introduction of fiber containers.

California markets are among the top markets in the country for proportion of milk sales through stores. By 1941 Los Angeles, San Diego, and other markets were served through wholesale outlets for more than 60 percent of their volume; in San Francisco wholesale outlets took more than 75 percent. In these markets the chain stores have seized upon milk as a preferred article for trade. An accompanying development of particular significance was specialization among distributors, some taking on wholesale trade exclusively, others operating mainly retail delivery routes.

In smaller markets, too numerous for individual mention, the development of specialized dairy stores has been the leading channel of increased store sales. These stores appeared in a variety of forms early in the depression. As milk depots just beyond the limits of many municipalities they flourished on reduced prices made possible, in part at least, by omitting many of the health-saving precautions required by city ordinances.

On the other hand, some of the dairy stores developed as outlets for a diversified line of dairy products - ice cream was a major item of sales, along with milk, and frequently many items were handled which were but distantly related to milk.

Among the larger markets which have experienced no appreciable change in store sales since 1930 is Boston - where, of course, stores had been an important outlet for milk as long as milk distribution had been an industry. Markets in such widely scattered areas as Connecticut, Louisville, Ky., and Portland, Oreg., likewise have undergone no marked change in store sales.

A variety of reasons are responsible for this stability. A price incentive has always been present where shifts to stores took place, but State control boards fixing resale prices have frequently not permitted a lower price to consumers for milk sold through stores than for milk delivered to the home by dealers. Dealers in some markets have discouraged lower prices for milk sold through stores because they have been reluctant to reduce the value of their investment in a delivery system, or because they feared a lowered rate of milk consumption. Milk wagon drivers' unions have sought to maintain the employment of their members, and have for this reason resisted the shift to stores in a number of cities.

Wholesale-Retail Volume Relationships

There are more abundant data on total sales at wholesale than on sales through stores, and the difference between these two classifications must be kept in mind. Dealers' records usually divide sales records only into retail and wholesale. Government milk control agencies, which offer most of the available data, rarely attempt to separate sales through stores from sales to other wholesale accounts.

Sales of milk to restaurants, hotels, and institutions make up the difference between the "all wholesale" and "store" percentages. It does not appear that the amount or proportion of such sales should vary greatly from time to time, so extremely wide differences between estimates of store and all wholesale sales are probably indicative of inaccuracies in one or the other, or both, of the estimates. Thirteen to fifteen percent seems to be a reasonable figure for "other wholesale" sales. Store and all wholesale sales in New York and Boston have been studied frequently and rather long series of estimates are available (table 1).

In other cities, at recent dates, the percentage which all wholesale milk was of all fluid milk ranged from approximately 25 percent in Connecticut to more than 75 percent in San Francisco and New Orleans (table 2). Few of these markets have comparable data for earlier years. Data for Los Angeles indicate that in 1930 all wholesale milk amounted to 30 percent of all milk sales, to be compared with 64 percent in 1941.²

²Spencer, Leland, *An Economic Survey of the Los Angeles Milk Market*. Calif. Agr. Expt. Sta. Bul. 513, 1931. See p. 46.

In Fresno, wholesale sales rose from 50 percent in 1929 to 85 percent in 1932, but were back to 70 percent in 1941.³ In the East Bay markets, principally Alameda County, California, milk sales were approximately 50 percent on wholesale and 50 percent on retail routes in 1931. By 1941 wholesale route sales of milk in Alameda County were 65 percent of the total.

Table 1. Wholesale and store sales of milk as percent of all fluid milk sales, Boston and New York

Year	Boston		New York	
	All wholesale Percent	Store Percent	All wholesale Percent	Store Percent
1886.....	1 48	.....	.....	.....
1887.....	1 51	.....	.....	.....
1915.....	1 75-80	.....	.....	.....
1918.....	1 65	.....	.....	.....
1920.....	.....	.....	4 60	4 35
1925.....	.....	1 26	5 68	5 32
1930.....	.....	.....	6 53	6 29
1931.....	.....	.....	.....	.....
1932.....	.....	.....	7 54	7 30
1933.....	.....	1 42	.....	.....
1934.....	.....	.....	.....	.....
1935.....	2 46	2 31	8 52	8 37
1936.....	.....	.....	.....	.....
1937.....	3 51	.....	.....	.....
1938.....	.....	.....	8 59	8 46
1939.....	.....	.....	.....	.....
1940.....	3 47	.....	8 66	8 52
1941.....	.....	.....	.....	.....

¹ Bacon, Lois, Institutional Factors Affecting the Marketing of Milk in Boston, Ph. D. thesis. Radcliffe College, 1934. See pp. 57, 66, and 68.

² Chas. F. Rittenhouse & Co., Summary Report on Cost of Distributing Milk in the Boston Market. Massachusetts Milk Control Board, Boston, Mass., 1936. See pp. 32 and 35.

³ Records of the Milk Market Administrator - Audit records of 11 major dealers, September and December 1937 (averaged) and December 1940.

⁴ Report of Fair Price Milk Committee of the City of New York. Legislative Document No. 29, 1920, Exhibit B.

⁵ Spencer, Leland and Norton, L. J., A Preliminary Survey of Milk Marketing in New York. N. Y. (Cornell) Agr. Expt. Sta. Bul. 445, 1925. See p. 31.

⁶ Report of the Milk Commission, New York City, Dept. of Health, 1931.

⁷ Report of the Joint Legislative Committee to Investigate the Milk Industry. Legislative Document No. 114, New York, 1933. See p. 163.

⁸ Blanford, C. J., Demand for Milk and Cream by Consumer Purchases at Retail Food Stores in New York City, N. Y. (Cornell) Agri. Expt. Sta. Bul. 765, 1941.

³ Tinley, J. M., An Analysis of the Fresno Milk Market. Calif. Agr. Expt. Sta. Bul. 559, 1933. See p. 40.

Table 2. Proportion which wholesale sales of milk were of total sales at recent dates in selected markets

Market	Date	Percentage which whole-sale sales were of total sales	Source of data
		<i>Percent</i>	
Minneapolis-St. Paul	1940	40	Estimate by dealers and others
St. Louis	1941, March	42	Reported by Milk Market Administrator
Omaha	1941, January	43	Dealers reports filed in office of the Milk Market Administrator
Boston	1940, December	47	Dealers reports filed in office of the Milk Market Administrator
Chicago	1941	50	Estimate by dealers and others
Portland, Oregon	1941	50	Estimate by dealers and others
Des Moines	1940, May-July	58	Records in office of Des Moines Cooperative Dairy Marketing Association
New York	1941	63	C. J. Blanford, Cornell Bul. 765
Los Angeles	1941, November	64	Reported by State Department of Agriculture, Bureau of Markets
Alameda	1941, November	65	Reported by State Department of Agriculture, Bureau of Markets
Louisville	1941, April	66	Reported by Milk Market Administrator
Fresno	1941, September	70	
Sacramento	1941, November	72	Reported by State Department of Agriculture, Bureau of Markets
San Francisco	1941, November	76	Reported by State Department of Agriculture, Bureau of Markets
New Orleans	1940 calendar year	79	Reported by Milk Market Administrator

An unusual trend occurred in St. Louis, where wholesale sales rose from 46 percent in 1935 to 52 percent in 1938, then subsided to 42 percent in 1941. In this instance, a sequence of innovations was seemingly responsible, with milk in gallon jugs stimulating store sales, only to be displaced by the 2-quart containers on retail routes (see page 13).

Types of Milk Dealers

Numbers of pasteurizing dealers

Along with changing tides in wholesale and retail sales, there have been changes in the position of the individual pasteurizing dealers, large and small. As a group, dealer numbers have decreased somewhat in most markets, while the total quantity of milk handled has increased. Over a period of years there have been noticeable differences in the average annual rate of turn-over among dealers in different markets. The numbers starting new or failing each year in Boston, Chicago, St. Louis, and Omaha, are shown in table 3.

Instances of spectacular growth of one or more firms may be cited from nearly every market. Such growth has nearly always resulted from vigorous exploitation of one or another of the less conventional methods of milk distribution.

Specialization among pasteurizing dealers

Within the institutional framework of particular markets, there have been instances of increased specialization - dealers tending to concentrate their business on a limited variety of outlets. Thus, more dealers are serving wholesale accounts exclusively. Others have grown up to supply their own outlets as, for instance, the increased volume handled by some firms which operate both milk plants and chains of special dairy stores, or the development of milk plants as subsidiaries of chain grocery organizations. In markets with considerable numbers of subdealers, there are generally plants which sell most or all of their output through subdealers.

The Chicago dealers exemplify a variety of specialized operations and perhaps represent as well as one market can the results of changing methods of distribution. Principal factors in this development have been the growth of wholesale sales and the activity of subdealers or vendors. The result is a considerable number of firms which have little or no retail business, several firms which operate few or no delivery trucks of their own, and a small number of unique operations, such as one dairy disposing of its product through vending machines or dispensers or another supplying only its own dairy stores (see table 4).

Retail routes continue to be an important distributing channel for many firms in Chicago, in spite of the increase of wholesale sales. With few exceptions, however, the dealers selling mainly to retail buyers are small. Among the 11 largest dealers, only 1 was exclusively retail, while 7 had mixed sales.

Other markets exhibit in greater or less degree the same sort of specialization that has occurred in Chicago. Boston and New York have had exclusively wholesale dealers for many years. In San Francisco, there were 15 dealers in 1937, of whom 4 were exclusively wholesale; by 1941 there were 7 exclusively wholesale dealers out of a total of 17. A survey of 122 farmers' cooperative milk plants in scattered markets disclosed 47 whose major outlet was to wholesale customers.

Table 3. Changes in numbers of dealers in selected markets

Year	Market											
	Boston ¹			Chicago ⁴			Omaha ⁴			St. Louis ⁴		
	No. at start of year ²	No. of new firms ³	No. of firms failing ³	No. at start of year	No. of new firms	No. of firms failing	No. at start of year	No. of new firms	No. of firms failing	No. at start of year	No. of new firms	No. of firms failing
1930.....	.....	.....	.....	135	9	7	.....	.....	.....	.....	.....	.....
1931.....	.....	.....	.....	137	11	8	.....	.....	.....	.....	.....	.....
1932.....	.....	.....	.....	140	5	7	.....	.....	.....	.....	.....	.....
1933.....	.....	.....	.....	138	11	3	.....	.....	.....	.....	.....	.....
1934.....	.....	.....	.....	146	7	10	.....	.....	.....	.....	.....	.....
1935.....	.....	.....	.....	142	6	11	.....	.....	.....	.....	.....	.....
1936.....	.....	.....	.....	138	1	9	.....	.....	.....	.....	.....	.....
1937.....	128	11	21	130	4	3	.....	.....	.....	.....	.....	.....
1938.....	113	24	17	131	0	2	.....	.....	.....	.....	.....	.....
1939.....	120	24	50	129	6	3	.....	.....	.....	.....	.....	.....
1940.....	104	6	18	132	10	6	.....	.....	.....	.....	.....	.....
1941.....	92	.....	.....	136	0	2	.....	.....	.....	.....	.....	.....
1942.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Average.	110	19	26	133	6	6	12.6	0.8	1.2	43.6	0.7	2.1
Percent new or failing		17	24		4	4		6	8		2	5

¹Excluding producer-dealers and dealers who buy milk only from other dealers.

²August 1.

³New firms and failures includes net changes in numbers of firms which were in business, but were reclassified from, or into, the group of dealers buying from other dealers or the group of producer-distributors.

⁴Dealers operating pasteurizing and bottling plants within the city.

Source: Data for this table were assembled from market administrator's records, health department data, and other records.

Table 4. Specialization in methods of distribution among Chicago milk dealers

Dealers by method of sale	Number of dealers by method of delivery			
	Largely or entirely by subdealers	Partly by subdealers	Largely or entirely by own routes	Total
Largely or entirely to wholesale buyers.....	5	2	19	26
About equal proportions to wholesale and retail buyers	5	5	8	18
Largely or entirely to retail buyers.....	8	11	¹ 71	90
Total	18	18	98	134

¹Including 4 dealers whose principal, or only, sales were through their own stores.

Subdealers

Subdealers, known in different markets as vendors, peddlers, or "bob-tailers," have been important both in numbers and influence in several major cities. Buying their milk already bottled from dairy plants, and distributing it to homes or to wholesale outlets, they have been most important for providing competition in the field of delivery service. Their only investment is in delivery equipment. Most of them own their own trucks, although sometimes they use rented equipment.

In New York the number of subdealers increased approximately 100 percent from 1938 to 1939, the number remaining since then at 450-500. They handle about 10 percent of the home delivered milk and wholesale sales are negligible.

In Chicago, vendors have been most active in developing wholesale outlets, particularly stores. It was probably the opposition of organized milk deliverymen to store sales that favored the entry of the subdealers or vendors into this sector of the market. They increased in numbers from about 300 in 1930 to nearly 600 in 1934. Increased acceptance of store sales by dealers in general is probably the principal factor which has kept the numbers of subdealers about constant since 1934; there were about 575 subdealers in the market in 1941.

Subdealers have been rare in most smaller markets. They tend to flourish where they can sell at reduced prices by accepting less than the prevailing wage for their labor. In smaller markets this same competitive basis is represented by producer-distributors who, when necessary, may accept low returns for milk production and processing activities, as well as on delivery labor.

Producer-distributors

Sales of bottled milk by farmers increased for a time during the depression, but a pronounced general decline has taken place in recent years

(table 5). For some individual markets and in terms of number of distributors, the changes have been even more striking. A reduction of 25 percent in numbers took place in Connecticut between 1934 and 1941. In Minneapolis-St. Paul the number of producer-distributors declined from 97 in 1933 to 70 in 1939.

The decline of producer-distributors is largely an expression of the growing preference for pasteurized milk. Voluntarily, producer-distributors in a number of markets have organized cooperative pasteurizing plants, and increasing numbers of the larger producer-distributors are installing individual pasteurizing plants. Increasing numbers of cities are requiring that all bottled milk be pasteurized, so that smaller producers find it difficult to continue operations.

Table 5. Delivery of fluid milk and cream by producer-distributors and others, United States, 1924-41

Year	Total sales of bottled milk and cream	Sales of bottled milk and cream by farmers	Sales of bottled milk and cream by other distributors
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
1924-29.....	39,466	6,488	32,978
1931.....	45,282	6,976	38,306
1932.....	45,160	7,028	38,132
1933.....	43,974	7,073	36,901
1934.....	42,138	7,081	35,057
1935.....	42,396	6,977	35,419
1936.....	42,624	6,734	35,890
1937.....	42,625	6,567	36,058
1938.....	41,441	6,449	34,992
1939.....	42,917	6,217	36,700
1940.....	43,677	6,091	37,586
1941.....	45,821	6,923	39,898

Sources: *Dairy Situation, February 1942*
Farm Production, Disposition and Income from Milk 1924-40
 " " " " " " " " May 1941, 1935-39
 " " " " " " " " April 1942, 1940-41
 U.S.D.A. Bureau of Agr. Economics April 1942

CHANGES IN CONTAINER TYPES AND SIZES

The waning of retail deliveries, spectacular as it has been, is mainly a change of emphasis between long-established methods of distribution. There is probably more that is genuinely new in the rise and fall of types and sizes of milk containers in recent years. The widespread adoption of paper containers came about because of improvements in materials, design, and methods of handling. New sizes of glass containers were developed, and modified forms of the quart bottle appeared. The pint size container lost some importance, perhaps as part of the trend toward larger sizes. Bottle caps of more elaborate design and purpose

have come into more common use, encouraged partly by sanitary regulations and partly by advertising or sales promotional objectives.

Single-Service Containers

A paper container for milk was invented and used in 1908. It was not until about 1938, however, that paper containers were widely adopted. Installation in New York City in 1929, Philadelphia in 1932, and New York again in 1935, marked the steady improvement in techniques of packaging milk in paper. Plants in many cities were equipped for paper in 1938, the first year to see really widespread introduction. The spread has since been rapid, being halted only since the fall of 1941 by the national goal of conserving critical materials by replacing no usable existing facilities. Until the close of the war, the further adoption of paper will depend on its possible choice for the few new plants that may be needed in areas experiencing either a considerable increase of population, or a complete breakdown of existing facilities.

Paper milk containers were introduced into the following markets in the specified years:

<u>Market</u>	<u>Year in which paper containers were introduced</u>
New York	1929
Philadelphia	1932
Baltimore	1937
Los Angeles	1938
San Francisco	1938
Minneapolis	1938
Buffalo	1938
Connecticut	1939
Washington	1939
Louisville	1939
Boston	1939
Chicago	1940
Cincinnati	1941

In 1941, about 300 milk plants were using paper containers. They distributed milk in more than 1,000 cities, towns, and villages in more than 25 States. Data for particular markets are scanty. Approximately 25 percent of the fluid milk in Chicago was being distributed in paper by the close of 1941, although paper containers had not yet been given full legal status by the Board of Health. In California markets, where the paper container had put in its appearance about 1938, from one-sixth to one-third of the milk was distributed in paper during 1941. The proportion increased during the year, despite competition from the newly introduced 2-quart glass bottle (see table 6).

Paper containers have been most widely used in the wholesale trade. By January 1942, in Los Angeles, fiber containers were used on 55 percent of all wholesale milk (excluding sales in bulk containers) but on only 1 percent of the retail milk. The chief disadvantage of paper is the

cost of the container itself, but costs are high for glass also in wholesale outlets. The single service container eliminates returns and deposits, and it is light and compact, making for efficiency in delivery and use of storage space and refrigeration. These characteristics are especially valuable in large volume deliveries and sales through stores.

Few markets use paper in home deliveries. New York has had fairly extensive use of 2-quart paper containers in an effort to make home delivery more attractive to consumers.

Table 6. Proportions of fluid milk distributed in glass, fiber, and bulk containers in selected California markets

Market	Month	Percentage of fluid milk by type of container			
		Bulk	Glass	Fiber	Total
San Francisco	Feb. 1941	9.0	70.6	20.4	100.0
	Feb. 1942	10.6	64.7	24.7	100.0
Los Angeles	Jan. 1941	8.7	62.2	29.1	100.0
	Jan. 1942	6.5	61.3	32.2	100.0
San Diego	Jan. 1941	17.3	70.5	12.2	100.0
	Jan. 1942	18.5	65.5	16.0	100.0
Alameda County	Jan. 1941	5.0	62.7	32.3	100.0
	Dec. 1941	5.8	63.6	30.6	100.0

Source: From reports of the Bureau of Markets, California Dept. of Agriculture.

Multiple-Quart Containers

Gallon and half-gallon glass containers led the field of innovations in several markets during the last decade and are still in a flux. They were used in St. Louis for several years on a small scale. There, milk in gallon jugs was first sold out of one dealer's plant on a cash-and-carry basis. A localized shift of sales off home delivery routes started, and to meet it other distributors began to offer gallon jugs of milk in home delivery. Early in 1938 the gallon jug had become common throughout the market. A year later the half-gallon bottle was being offered in substantial quantities. In March 1941, the gallon jug was used on retail routes for 13½ percent of St. Louis fluid milk, and half-gallon bottles for 16 percent, making a total of 29 percent of all milk being sold from retail routes in multiple-quart containers. Sales from plant stores and to grocery stores amounted to an additional 9 percent. The major part of the increase occurred at the expense of sales in single quarts, which dropped from 82 percent of the volume in 1937 to 50 percent in 1941 (see table 7).

Half-gallon and gallon bottles were introduced in Chicago about 1937 in an attempt to halt the shift from retail route to store sales. While only partially successful in its principal object, the innovation does seem to have strongly attached itself to the market. In December 1940,

more than 6 percent of the sales of 11 major dealers were in gallon containers. Half-gallons accounted for more than 12 percent of the total sales.

Table 7. Distribution of class 1 sales by units, St. Louis marketing area, 1934-1941

Month and year	Percentage of total class 1 sales in -							Total
	Bulk	Gallons	Half-gallons	Quarts	Pints	1/3 pints	1/2 pints	
July 1934		15.1	.....	76.8	5.4	0.6	2.1	100.0
July 1935		9.4	.....	83.3	4.6	0.6	2.1	100.0
July 1936		8.0	.....	83.6	4.7	0.7	3.0	100.0
July 1937		9.2	0.03	82.4	4.1	0.7	3.6	100.0
July 1938		12.7	0.2	79.5	2.6	0.8	4.2	100.0
July 1939	3.85	15.4	14.3	60.9	1.2	0.6	3.7	100.0
March 1940	4.81	18.0	16.3	54.9	1.3	0.7	4.0	100.0
July 1940	4.97	15.4	16.8	55.8	1.5	0.9	4.7	100.0
March 1941	4.06	19.2	19.8	49.7	1.2	0.8	5.2	100.0

Source: Compiled by the office of the St. Louis Milk Market Administrator.

Varied channels of use for multiple-quart containers

In St. Louis, Chicago, and New York the 2-quart container was adopted as a possible attraction for customers who were deserting the retail routes to buy at stores. More than 80 percent of the half-gallon containers used in St. Louis and 70 percent of the gallon containers were used on retail routes in March 1941. Retail route sales were 27 percent in half-gallons, while wholesale sales were only 13 percent in containers of that size. In Washington, D. C., however, the 2-quart container was introduced by a chain of dairy stores, and has not yet made its way out to the home delivery routes. The California markets are dividing multiple-quart container sales more evenly, for the 2- and 4-quart containers are being used both to compete with fiber containers in the wholesale trade, and to retain home delivery customers. In Fresno, where more than 56 percent of all milk was sold in 2-quart containers during January 1942, 33.2 percent of these containers were used on retail routes, and 66.8 percent were used on wholesale routes. Los Angeles, San Francisco, and San Diego, respectively, used 47, 28, and 43 percent of their half-gallon containers on retail routes.

Clearly the use of multiple-quart containers has a varied background. It is used in one market to build a new business, and in another to protect an established business.

Pint Containers

Changes among container sizes were not confined to markets where new sizes were introduced. The pint container has declined in importance in several markets. In Los Angeles it fell from 12.0 to 1.5 percent of the milk volume between 1930 and 1942; in St. Louis, milk in pint containers dropped from 5.4 percent of the total in 1934 to 1.2 percent in 1941.

The declines have been variously divided between wholesale and retail outlets. Pint sales in Los Angeles, 1930, were 94 percent on retail routes. In January 1942, pint sales were 79 percent on wholesale routes. An almost equal division of the decline occurred in St. Louis, where 54 percent of sales of pints were on wholesale routes, both in July 1934 and July 1941.

Some markets show small declines or none. In San Diego, Calif., and Louisville, Ky., pint containers were actually used more in 1941 than earlier. Such increases may be attributed to expanded industrial activity, the smaller units being in demand for lunches. In San Diego, for example, milk in pints made up 3.1 percent of wholesale and 2.4 percent of retail sales in January 1941. By December 1941, pints had risen to 2.8 percent of retail sales, but had become 5.5 percent of wholesale sales.

Such changes probably indicate fundamental changes in consumption habits, although additional information would be required to determine what actually had occurred. Declining use of the pint container in the home is possibly associated with higher per capita consumption, possibly it is only associated with a change in buying habits. Increased wholesale sales of pints to stores might indicate a lowering of consumption among persons buying through stores, while larger wholesale sales to restaurants and hotels may indicate a raising of per capita consumption in another class of consumers. Of course, price differentials are closely involved in any changes between container sizes or types.

Table 8. Proportions of fluid milk distributed in various sizes of containers in Chicago, 1934-35 and December 1940

Size of container	Percentage distributed in 1934-35 ¹	Percentage distributed in December 1940 ²
Bulk.....	7.6	3.5
Gallon.....	.....	6.1
1/2 gallon.....	.....	12.5
Quart.....	86.4	73.3
Pint.....	2.5	2.6
1/3 quart.....	0.3	0.7
1/2 pint.....	1.2	1.3
Total.....	100.0	100.0

¹Trelogan, H. C., *An Economic Analysis of the Chicago Milk Market*. Ph. D. thesis, University of Minnesota, 1938. Based on sales by 121 distributors.

²Data from Market Administrator's office for 11 dealers handling 68 percent of the class 1 sales in the market.

Table 9. Proportions of fluid milk distributed in various sizes of containers in selected California markets

Market	Month	Percentage of fluid milk by container size							
		Bulk	Gallon	1/2 gallon	Quart	Pint	1/3 quart	1/2 pint	Total
San Francisco	Feb. 1934	9.0	(¹)	6.0	73.7	4.0	0.3	7.0	100.0
	Feb. 1942	10.6	(¹)	0.2	75.4	4.5	1.8	7.5	100.0
Los Angeles	Sept. 1930 ²	8.2	.....	.....	74.5	12.0	2.4	2.9	100.0
	Jan. 1941	8.7	0.4	15.5	70.4	1.0	0.7	3.5	100.0
	Jan. 1942	6.5	(¹)	35.9	50.7	1.5	1.2	4.2	100.0
San Diego	Jan. 1941	17.3	.....	19.8	56.9	2.8	1.1	2.1	100.0
	Jan. 1942	18.5	0.1	26.6	42.8	4.6	1.7	3.7	100.0
Alameda County	Mar. 1931 ³	7	.....	.....	86	4	1	2	100
	Jan. 1941	5.0	(¹)	14.7	75.1	1.9	0.2	3.1	100.0
	Dec. 1941	5.8	(¹)	28.4	58.9	3.1	0.8	3.0	100.0
Fresno	Feb. 1931 ⁴	12.3	.....	.....	79.9	4.1	1.9	1.8	100.0
	Jan. 1941	8.9	.....	47.4	39.2	0.6	0.5	3.2	100.0
	Jan. 1942	7.8	.....	51.8	33.4	0.9	0.9	3.2	100.0

¹Less than 0.05 percent.

²Calif. Bul. 513.

³Calif. Bul. 534.

⁴Calif. Bul. 559.

Source: From reports of the Bureau of Markets, California Department of Agriculture, except as otherwise noted.

Table 10. Proportions of fluid milk distributed in various sizes of containers in Louisville, 1936-1941

Size of container	1936 ¹	1937 ¹	1938 ¹	1939 ¹	1940	1941 ¹
Gallon (bulk).....	4.8	4.1	4.2	4.1	.....	2.5
1/2 gallon.....	.....	.....	.....	.....	.....	.....
Quart.....	84.9	83.1	81.7	81.6	.....	73.8
Pint.....	1.9	2.1	2.2	2.0	.....	3.0
1/3 quart.....	0.4	0.6	0.4	0.6	.....	1.0
1/2 pint.....	8.0	10.1	11.5	11.7	.....	19.7
Total.....	100.0	100.0	100.0	100.0	.....	100.0

¹Sales of 7 dealers handling approximately 60 percent of total class 1 milk in the market.

Design of Glass Containers

Glass bottles have undergone several changes in design, aside from the introduction of new sizes and shifts in relative importance of old sizes. A light-weight quart bottle has been in use for several years. Bottles have been designed with smaller mouths which save on cap materials.

Such changes do not have the power to affect distributing methods greatly by themselves, but they may be factors deciding the balance between more obvious trends.

Bottle Closures

Bottle closures have become more elaborate, partly as a sales-promotional device, and partly from a public health motive. The simple plug cap has given way to caps which partially cover the pouring lip of the bottle. This is the most widely used of the newer cap styles. Caps which completely cover the lip of the bottle, or combined use of a plug cap plus a hood, are at the extreme in cap design. The purpose, of course, is to protect the milk from contamination that may reach the pouring lip of the bottle. It is a desirable object, but the factor of expense must be weighed against the health hazard involved. For the most part, the full cover caps are being used on special grades of milk where there is some price premium, part of which may be used to offset the added cap costs. (See page 17.) Conversely, the added protection afforded by the cap implies that a greater value is being given to the purchaser of the premium milk.

DEVELOPMENTS IN TYPES OF MILK

Milk itself did not emerge untouched from the decade of the turbulent thirties. At the start of that period, just a few kinds of milk shared the market with the major supply of "regular" milk. There were grades rather than types of milk; grade A and certified milk differing from regular milk mainly in the amount of care and sanitary supervision that accompanied their production and processing. At the end of the decade the number of kinds of milk had increased greatly, and new processes yielded milks with altered nutritive properties. The old grades had lost ground. The newer types were replacing them and part of the regular milk as well. In addition, there appeared to be more extensive use of brands to differentiate the regular milk sales.

Certified and Grade A

Sales of certified and grade A milks have declined in nearly every market (see tables 11 to 17). The general fact is widely recognized and the data from various markets serve less for proof than for accuracy of perspective on the relative volumes of sales of such milks. The additional safeguards under which certified and grade A milks are produced were especially valuable at an earlier date. Over a period of about 20 years, however, the quality of general milk supplies of most cities has been improved materially, and the consumption of grade A and certified milks probably reflect a narrowing of the margin of preference on grounds of safety.

Processes which increase or alter the nutritive properties of milk have been responsible for the greatest changes in types of milk on the market. Homogenization, various treatments to increase the vitamin content, and the addition of flavors have gained varying degrees of acceptance.

Homogenized Milk

Sales of homogenized milk appear to have increased most. Homogenization is used frequently in milk with increased vitamin D content, but also on regular milk. Nearly 25 percent of the fluid milk for St. Louis was being homogenized in July 1940. In Los Angeles, more than 13 percent was homogenized in March 1941. These probably are extreme cases. Chicago with 3 percent, and Boston with 4 percent probably represent the usual degree to which homogenization is being used.

Homogenized milk did not become a regular item in the bottled milk trade until after 1930. By 1935 it was being used in scattered cities, and during the next few years it was widely adopted. Milk dealers and milk marketing officials express more confidence in the future of homogenized milk than for any other of the special kinds now being sold.

Vitamin Milk

Vitamin D milk has shown a less pronounced growth than has homogenized milk. Stepped up vitamin D milk was the first of the modified milks to be widely used, and even now there are probably more dairies selling this type of milk than any other special type. The choice of three methods of increasing the vitamin D content of milk makes it available to all dairies regardless of size. The actual volume of sales of vitamin D milks has not been large in spite of widespread use. In St. Louis, a maximum of 3.8 percent of total sales was reached in 1937, followed by a continued decline to 0.5 percent in 1940. Boston also showed higher sales of vitamin D milk in 1937 than in 1940. Data available for other markets are not fully comparable, but a fairly uniform volume of vitamin D sales appears to have been reached at 2 to 4 percent of all sales in most markets.

Milk as a carrier for vitamin supplements set a new mark with the introduction of a vitamin modified milk in California markets early in 1941. This milk, which is pasteurized and homogenized, contains added amounts of carotene, thiamine, riboflavin, ascorbic acid, nicotinic acid, and calcium pantothenate. This development is partly an expression of the feeling that milk, as a regular and almost universal article of diet, provides an ideal medium for vitamin supplements.

Branded Milks

Special milks, such as homogenized, vitamin D, and others, are offered by some dealers as a more or less exclusive product, which will increase his volume of sales or permit him to sell at a higher price. In following this objective, dealers frequently established additional brands or types of milk. Some of these are distinguished by having a higher milk fat content, or by being produced under superior conditions prescribed by the

dealer. Others are regular milk put up under a different label to capture or hold a greater volume of sales than could be attained with a single trade mark.

Table 11. Types and relative volumes of milk being distributed by selected Chicago dealers, 1934 and 1940¹

Type of milk	Percentage of sales	
	1934	1940
Regular.....	98.84	83.90
Relief.....	.56	8.66
Homogenized.....	.....	3.07
Vitamin D.....	.26	1.32
Homogenized vitamin D.....	.....	.01
Breed.....	.03	.88
Soft Kurd.....	.....	.99
Irradiated Soft Kurd.....	.....	.85
4½ percent.....	.....	.30
Certified.....	.17	.01
Special.....	.12	.01
Preferred.....	.02	.....
Total.....	100.00	100.00

¹Based on sales of 12 dealers handling approximately 70 percent of total class 1 sales.

Table 12. Types and relative volumes of milk being distributed by selected dealers in St. Louis, July 1935 to July 1940¹

Type of milk	Percentage of sales in July					
	1935	1936	1937	1938	1939	1940
Regular.....	76.4	93.6	92.3	81.8	79.1	72.7
Special brands.....	17.9	.....	.....	2.3	1.2	1.6
Grade A.....	4.3	3.6	2.9	1.2	.....	.....
Grade A - Vitamin D.....	0.3	0.3	2.3	.....	.....	.....
Certified.....	0.2	0.2	0.1	0.1	.....	.....
Certified - Vitamin D...	0.1	0.1	0.1	.....	.....	.....
Soft Curd.....	0.1	0.1	0.1	0.2	.....	.....
Breed.....	0.7	1.0	0.8	1.0	0.8	1.0
Homogenized.....	.....	.....	.....	11.9	18.1	24.2
Regular - Vitamin D.....	.....	1.1	1.4	1.5	0.8	0.5
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

¹Sales of dealers handling approximately 90 percent of the fluid milk in the market.

Table 13. Types and relative volumes of milk being distributed in Connecticut, 1934 to 1937

Type of milk	Percentage of sales			
	1934	1935	1936	1937
Grade A.....	9.1	8.5	7.9	7.7
Grade B.....	88.0	86.6	86.3	86.3
Certified.....	0.2	0.4	0.5	0.4
Vitamin D.....	.....	1.0	2.9	3.4
Chocolate.....	.....	0.3	0.7	1.1
Charity.....	2.7	3.2	1.7	1.1
Total.....	100.0	100.0	100.0	100.0

Table 14. Types and relative volumes of milk being distributed by selected Boston dealers,¹ 1934, 1937, and 1940

Type of milk	Percentage of sales		
	1934	1937	1940
Grade A.....	8.5	7.4	7.4
Grade A - Vitamin D.....	0.7	(²)	.4
Grade A - homogenized.....	.....	.....	.2
Grade B.....	84.4	84.1	88.0
Grade B - Vitamin D.....	3.0	4.0	3.4
Grade B - homogenized.....	.....	.....	1.8
Certified.....	.5	.6	.6
Special types or brands.....	2.2	1.6	20.1
Breed milk.....	.3	.5	.8
Relief.....	.....	.....	5.6
Chocolate.....	.1	.9	1.2
Skim milk.....	.3	.7	.5
Total.....	100.0	100.0	100.0

¹Sales records of 9 dealers handling 75 to 80 percent of total class 1 sales in the market.

²Less than 0.1 percent.

Table 15. Types and relative volumes of milk being distributed by selected dealers in Portland, Oreg., 1935, 1937, and 1938

Type of milk	Percentage of sales		
	1935 ¹	1937 ²	1938 ²
Four percent.....	64.5	81.0	80.4
Five percent.....	30.8	15.2	17.1
Chocolate.....	4.7	1.1	0.3
Bulgarian.....	.....	0.6	0.6
Vitamin D.....	.....	2.1	1.4
Six percent.....	.....	.....	0.1
Seven percent.....	.....	.....	0.1
Total.....	100.0	100.0	100.0

¹Sales of 7 Portland Plants.

²Sales of 1 Portland dealer, Jan-Oct., 1937, and June-Sept., 1938.

Table 16. Types and relative volumes of milk being distributed by selected dealers in Los Angeles, year 1933 and March 1941

Type of milk	Percentage of sales	
	Year 1933 ¹	March 1941 ²
Regular.....	75.4	54.0
Homogenized.....	.....	13.8
Special.....	1.2	10.2
Raw.....	15.7	4.1
Breed.....	.....	2.8
Homogenized Vitamin D.....	.....	2.7
Chocolate.....	1.5	2.3
Half and half.....	.....	2.0
Certified.....	1.7	1.6
Vitamin D.....	.....	0.8
Buttermilk.....	4.5	5.7
Total.....	100.0	100.0

¹Twenty-one dealers handling more than 65 percent of total sales in the county.

²Seven dealers handling more than 75 percent of total sales in the county.

Table 17. Types and relative volumes of milk being distributed by selected dealers,¹ San Francisco, 1941

Type of milk	Percentage of sales of specified type
Regular.....	88.3
Relief.....	6.0
Breed (Golden Guernsey and goat).....	2.5
Special (Golden V and Golden Crest).....	1.2
Certified.....	0.3
Homogenized.....	0.2
Chocolate.....	0.4
Buttermilk.....	1.1
Total.....	100.0

¹Sales of 6 dealers handling about 80 percent of the fluid milk in the market.

CHANGES IN PRICE STRUCTURES

Prices, perhaps more than any matter of consumers' tastes or service demands, will determine the eventual picture of distribution methods. For an appraisal of long-time prospects, therefore, the foregoing discussion would be incomplete without the inclusion of price material.

Price data were assembled to cover this aspect of distribution methods, but time has not permitted a detailed analysis. Some prices which may be of interest in conjunction with other material in this report are included in tables 18 to 21.

A cursory survey of price histories and price structures in comparison with the various trends that are discussed above suggests a variety of questions that deserve deeper study. It appears that price changes have not been consistent either in preceding or in following a change in distribution method. The response to price differentials or given amounts has varied from market to market. From the variability of price patterns, prices appear to be only loosely tied to "costs" in the case of single items on the schedule.

During the present war the value of resources for competing uses is being expressed much less by prices and more by direct Government controls. Hence, the material and service contents of distribution methods are temporarily more important than their price aspects.

Table 18. Prices¹ of milk in quart containers, delivered to homes in selected cities, 1932-41

Market	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
	<i>Cents per quart</i>									
Boston, Mass.....	10	11	11	12	12	13	13	13	13	13
Chicago, Ill.....	11	10	10	11	11	12	12	12	13	14
Hartford, Conn.....	12	12	14	13	13	14	14	14	14	15
Los Angeles, Calif....	10	11	11	11	11	12	11	11	11	12
Louisville, Ky.....	10	10	11	12	12	14	13	12	12	14
Minneapolis, Minn....	8	8	9	10	10	11	11	11	10	12
New York, N. Y.....	12	11	13	13	13	13	13	13	14 $\frac{1}{2}$	15
Omaha, Nebr.....	9	9	9	10	10	11	11	10	11	11
Portland, Oreg.....	9	9	10	11	11	12	11	11	11	11
St. Louis, Mo.....	10	10	11	11	12	13	13	12	13	14
San Francisco, Calif.	12	12	12	12	13	13	13	12	12	14
Washington, D. C....	13	13	13	13	13	14	14	14	14	14

¹Prices given are based on the U.S.D.A. Fluid Milk Price Report. They represent the prevailing level indicated by the trend and range of prices reported by months for the year.

Table 19. Prices¹ of milk in quart containers sold by stores, selected cities, 1932-41

Market	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
	<i>Cents per quart</i>									
Boston, Mass.....	8 $\frac{1}{2}$	9	10	11	11	12	12	12	12	12
Chicago, Ill.....	11	10	9	10	10	11	10	10	9	12
Hartford, Conn.....	11	11	13	12	12	13	13	13	13	14
Los Angeles, Calif....	8	9	9	9	9	10	9	9	10	11
Louisville, Ky.....	9	10	10	11	12	13	12	11	11	13
Minneapolis, Minn....	7	8	9	10	10	11	10	10	9	11
New York, N. Y.....	10	10	12	12	12	11	11	11	12	14
Omaha, Nebr.....	9	9	9	8	9	10	10	9	10	10
Portland, Oreg.....	8	8	9	10	11	12	11	11	11	11
St. Louis, Mo.....	9	9	10	10	11	13	12	11	12	13
San Francisco, Calif.	10	10	10	10	11	11	12	11	11	13
Washington, D. C....	12	12	12	12	12	12	12	12	12	12

¹Prices given are based on the U.S.D.A. Fluid Milk Price Report. They represent the approximate differential of all store prices below the price of milk delivered to homes. The range of store prices prevailing at a given time is usually wider than the range of prices for milk delivered to homes.

Table 20. Prices¹ of certified milk in quart containers, selected cities, 1932-41

Market	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
	<i>Cents per quart</i>									
Boston, Mass.....	26	25	22	22	22	22	22	22	22	22
Chicago, Ill.....	24	14	16	16	16	17	17	17	18	17
Hartford, Conn.....	25-35	20-30	18	18	18	19	19	19	19	20
Los Angeles, Calif....	20	17	15	15	15	16	17	15	16	17
Louisville, Ky.....	18	.....	.....	.....	.....	.....	.....	.....	.....	18
Minneapolis, Minn....	18	15	15	16	16	17	17	17	18	20
New York, N. Y.....	25	22	18	19	19	19	20	20	20	22
Omaha, Nebr.....	.....	.....	.....	.....	15	13	14	14	14	14
Portland, Oreg.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
St. Louis, Mo.....	25	20	18	16	16	18	18	17	16	16
San Francisco, Calif..	25	17	17	17	17	18	18	18	18	18
Washington, D. C.....	30	30	20	20	18	20	20	20	20	.....

¹Prices given are based on the U.S.D.A. Fluid Milk Price Report. They represent the prevailing level indicated by the trend and range of prices reported by months for the year.

Table 21. Prices¹ of "special" milk in quart containers, selected cities, 1932-41

Market	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
	<i>Cents per quart</i>									
Boston, Mass.....	12-15 $\frac{1}{2}$	13-15	12-14 $\frac{1}{2}$	13-17	13-17	14-16	14-17	14-17	15-17	15-17
Chicago, Ill.....	14	13	12	12-14	12-14	14-16	15-16	14-16	14-16	15-17
Hartford, Conn.....	15-25	15-20	16-17	16	15-18	16-17	16-17	16-17	15-18	18
Los Angeles, Calif....	15	13-15	11-13	13	11-13	13-15	13-15	17	.....	13
Louisville, Ky.....	13	.....	.....	.....	.....	15	15	14	14	16
Minneapolis, Minn....	11	10	11-12	11-13	11-13	12-13	12-14	12-14	11-12	13-15
New York, N. Y.....	15	13-14	16	16	16	16-17	16-17	17-18	17-18	17-18
Omaha, Nebr.....	12	11	10-11	11-12	11-12	12-13	12-13	12-13	13	13
Portland, Oreg.....	10	10	11	11	12	14	13	13-15	12-15	13-16
St. Louis, Mo.....	13-15	13-15	14	14-15	15-16	16	15-17	14-16	13 $\frac{1}{2}$ -15	15-16
San Francisco, Calif..	13-30	12-30	13	14-15	14-15	15	15-18	14	14	14-15
Washington, D. C.....	15-22	15-22	15-20	15-20	15-20	16-19	16-19	16-19	.....	15-18

¹Prices given are based on the U.S.D.A. Fluid Milk Price Report. They represent the prevailing price ranges for the variety of milks described on page 17.

CONCLUSIONS

A decade of change has seen increased sales of milk through stores in many markets, with a corresponding decline of sales in house-to-house delivery. In other markets, by contrast, the earlier balance between store and home delivery sales has persisted. The changes are evidence of flexibility of consumers' tastes and habits, and of the possibilities that exist for this newer method of distribution. The stable markets reflect consumers' stability in some instances, but probably the greatest number of cases can be explained in terms of the inertia of established market institutions.

Important changes in container types have taken place. Single service fiber containers are used for packaging considerable volumes of milk in some markets. Multiple-quart glass containers are well established. Both of these container innovations were closely related to the expansion of store sales. Dealers using fiber containers have tended to use fiber exclusively. The multiple-quart glass container represents an addition to the line of standard glass bottle operations.

Prospects for the future are clearly divided by the difference between war conditions and the probable conditions of the hoped for peace. Until the war is over there is little likelihood of further changes requiring replacement of usable plant facilities. Store sales probably will continue to expand relative to home delivery sales. There will probably be further reductions in the number of types of milk. Price patterns may be altered where that will help in getting a more desirable allocation of milk supplies or a more efficient use of distribution facilities.

Milk distribution after the close of the war is almost certain to be more dynamic than it has been in the past. The changes from peace to war and then from war to peace are likely to weaken the customs and institutional restraints that marketing innovations had to contend with in the pre-war period. Existing plants and equipment will have depreciated greatly, and the eventual reconstruction of these facilities will provide an unparalleled opportunity for the spread of new techniques. Some of the trends of the future may be forecast by the recent trends discussed in this report. There may be developments even more revolutionary. The setting is right for almost unimagined steps in removing the inefficiencies which have received so much critical public attention in the past.

REFERENCES TO DISCUSSION AND DATA BY MARKETS

Markets referred to	Channels of distribution	Container types and sizes	Types of milk	Prices
	<i>Page</i>	<i>Page</i>	<i>Page</i>	<i>Page</i>
Chicago, Ill.	3, 6*, 7, 8*, 9*, 9	11, 12, 13, 14*	17, 18*	21*, 22*
New York, N. Y.	3, 4, 5*, 6*, 7, 9	11, 12, 13		21*, 22*
Los Angeles, Calif.	3, 4, 6*	11, 12*, 13, 14, 15*	17, 20*	21*, 22*
San Diego, Calif.	3	12*, 13, 14, 15*		
San Francisco, Calif.	3, 4, 6*, 7	11, 12*, 13, 15*	20*	21*, 22*
Boston, Mass.	4, 5*, 6*, 7, 8*	11	17, 19*	21*, 22*
Connecticut	4, 10	11	19*	21*, 22*
Louisville, Ky.	4, 6*	11, 14, 15*		21*, 22*
Portland, Oreg.	4, 6*		19*	21*, 22*
New Orleans, La.	4, 6*			
Fresno, Calif.	5, 6*	13, 15*		
Alameda, Calif.	5, 6*	12*, 15*		
St. Louis, Mo.	6*, 6, 7, 9*	12, 13*, 13, 14	17, 18*	21*, 22*
Minneapolis- St. Paul, Minn.	6*, 10	11		21*, 22*
Omaha, Nebr.	6*, 7, 8*			21*, 22*
Des Moines, Ia.	6*			
Sacramento, Calif.	6*			
Philadelphia, Pa.		11		
Baltimore, Md.		11		
Buffalo, N. Y.		11		
Washington, D. C.		11, 13		21*, 22*
Cincinnati, O.		11		

*Indicates tabular material.

